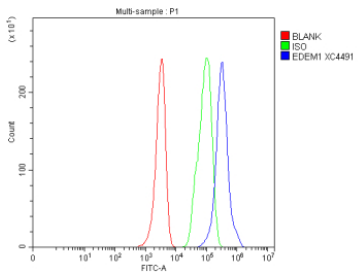
EDEM1 Antibody / ER degradation-enhancing alpha-mannosidase-like protein 1 (FY12592)

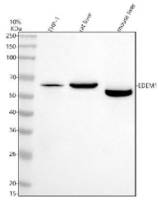
Catalog No.	Formulation	Size
FY12592	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q92611
Applications	Western Blot : 0.25-0.5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This EDEM1 antibody is available for research use only.



Flow Cytometry analysis of HEL cells using anti-EDEM1 antibody. Overlay histogram showing HEL cells stained with (Blue line). To facilitate intracellular staining, cells were fixed with 4% paraformaldehyde and permeabilized with permeabilization buffer. The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti-EDEM1 antibody (1 ug/million cells) for 30 min at 20oC. DyLight 488 conjugated goat anti-rabbit IgG (5-10 ug/million cells) was used as secondary antibody for 30 minutes at 20oC. Isotype control antibody (Green line) was rabbit IgG (1 ug/million cells) used under the same conditions. Unlabelled sample without incubation with primary antibody and secondary antibody (Red line) was used as a blank control.



Western blot analysis of EDEM1 using anti-EDEM1 antibody. Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human THP-1 whole cell lysates, Lane 2: rat liver tissue lysates, Lane 3: mouse liver tissue lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-EDEM1 antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using an ECL Plus Western Blotting Substrate. Western blot analysis of cell and tissue lysates probed with anti-EDEM1 shows a major band at ~66 kDa, slightly below the predicted ~74 kDa, consistent with partial processing and variable glycosylation. The mouse liver band migrates lower than human and rat EDEM1, reflecting species-specific differences in N-glycosylation efficiency.

Description

EDEM1 antibody detects ER degradation-enhancing alpha-mannosidase-like protein 1, an essential quality-control enzyme involved in the endoplasmic reticulum-associated degradation (ERAD) pathway. EDEM1 recognizes misfolded glycoproteins, trims mannose residues, and targets them for degradation via the ubiquitin-proteasome system. The EDEM1 antibody is widely used in cell biology, proteostasis, and molecular quality-control studies to examine protein folding, glycoprotein degradation, and ER stress responses.

EDEM1 is encoded by the EDEM1 gene located on human chromosome 3p26.1. The protein is approximately 766 amino acids in length and belongs to the glycosyl hydrolase 47 family. EDEM1 localizes to the lumen of the endoplasmic reticulum, where it associates with chaperones such as calnexin and BiP. It functions by accelerating the removal of mannose residues from misfolded glycoproteins, signaling their export from the ER for proteasomal degradation.

The EDEM1 antibody detects an 85 kilodalton band in western blot assays and exhibits reticular ER staining under confocal microscopy. EDEM1 plays a pivotal role in maintaining proteostasis by preventing accumulation of misfolded proteins, thereby protecting cells from ER stress-induced apoptosis. Under stress conditions, expression of EDEM1 is upregulated through the unfolded protein response (UPR), particularly by transcription factors ATF6 and XBP1.

Dysregulation of EDEM1 contributes to neurodegenerative diseases, diabetes, and cancer, where chronic ER stress leads to cell dysfunction. In addition to its role in degradation, EDEM1 fine-tunes glycoprotein folding efficiency and influences secretion rates of correctly folded proteins. Because EDEM1 acts upstream of ERAD, it serves as an early determinant of glycoprotein fate within the secretory pathway.

Through its key role in ER quality control, EDEM1 ensures fidelity of protein folding and cellular homeostasis. NSJ Bioreagents provides a validated EDEM1 antibody optimized for its applications, supporting research into protein quality control, glycoprotein maturation, and cellular stress adaptation.

Application Notes

Optimal dilution of the EDEM1 antibody should be determined by the researcher.

Immunogen

E.coli-derived human EDEM1 recombinant protein (Position: P124-I657) was used as the immunogen for the EDEM1 antibody.

Storage

After reconstitution, the EDEM1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.